

RECEIVED  
CENTRAL FAX CENTER

2

MAR 31 2008

CLAIM AMENDMENTS AND STATUS

1-20 (cancelled)

21. (withdrawn) A combination in line plastic spiral coil forming and binding machine comprising:

a coil forming machine for heating, forming and cutting discrete segments of plastic binding coils, said discrete segments being of a length required for a particular book being bound;

a binding machine for binding said discrete segments into holes of the book being bound; and,

a transfer mechanism for transferring said segments of heated binding coils from said coil forming machine to said binding machine, said transfer mechanism being selected to provide slow cooling of said coil segments and a sufficient duration of time between when said coils segments are cut and said coil segments arrive at said binding machine to provide adequate cooling of a range of sizes and gauges of binding coil segments for proper processing by said binding machine.

22. (withdrawn) The combination plastic spiral coil forming and binding machine as in claim 21 wherein said transfer mechanism includes a linkage cooling conveyor.

23. (withdrawn) The combination plastic spiral coil forming and binding machine as in claim 22 wherein said cooling conveyor further includes a drive mechanism for intermittently advancing said binding coils toward said binding machine.

24. (withdrawn) The combination plastic spiral coil forming and binding machine as in claim 21 wherein said transfer mechanism further includes a mechanism for intermittently advancing said binding coils toward said binding machine.

25. (withdrawn) The combination plastic spiral coil forming and binding machine as in claim 24 wherein said transfer mechanism includes a linkage cooling conveyor for conveying plastic coils comprising a wide belt supported by a stationary

horizontal platen, wherein said wide belt has a rigid chain construction with a plurality of fins attached thereto; a drive pulley communicating with and advancing said wide belt; a plurality of fins form compartments, wherein said compartments allow placement of plastic coils therein; and wherein said mechanism for intermittently advancing said coils comprises a gear motor electrically connected to said drive pulley; and, a motor speed controller electrically connected to said gear motor, wherein said motor speed controller causes said drive pulley to intermittently rotate thereby intermittently advancing said plastic coil on said belt towards a binding machine.

26. (withdrawn) The combination plastic spiral coil forming and binding machine as in claim 21 wherein said binding machine interacts with said plastic spiral forming machine at compatible speeds to each other, said coil forming machine having a means for taking plastic thread from a spool, a heating chamber for preheating said plastic thread, an advancement means advancing and then winding said plastic thread on a mandrel, a discharge element discharging said heated plastic thread in free air as a heated spiral coil, a cutter cutting said heated spiral coil being cut to a predetermined size as a heated coil, said heated coil, being conveyed to said transfer mechanism, said transfer mechanism moving said coil intermittently and allowing said coil to cool; and, said cooled coil being transported by said transfer mechanism to a receiving conveyor of said binding machine.

27. (withdrawn) the combination plastic spiral coil forming and binding machine as in claim 22 further comprising a drive motor moving said linkage cooling conveyor.

28. (withdrawn) The combination plastic spiral coil forming and binding machine as in claim 27 further comprising a sensor detecting an end of said plastic spiral, said sensor being adjustable to a required spiral length as dictated by a book being bound by said binding machine, said sensor initiating cutting of said hot spiral by a cutter by a signal amplified by a driver, a signal pulse from said sensor also initiating an index cycle of said motor through a controller and a logic gate, said motor being stopped when a next vane is detected in a predetermined position by a detector.

29. (withdrawn) The combination plastic spiral coil forming and binding machine as in claim 28 wherein said linkage cooling conveyor includes a plurality of compartments for said spiral coils and said machine further includes a switch for indexing advancing movement of said linkage cooling conveyor incrementally to sequentially and discretely empty said compartments of said cooled spiral coils therefrom.

30. (withdrawn) The combination plastic spiral coil forming and binding machine as in claim 21 wherein said coil forming machine and said binding machine are separate machines that operate independently of one another.

31. (currently amended) A method for forming a plastic spiral coil in a typical coil forming machine and binding the same into holes of a book to be bound in a typical page binding machine comprising the steps of:

heating and forming a plastic binding coil spiral-shaped filament in a coil forming machine;

cutting discrete plastic binding coil segments away from said heated binding coil spiral shaped filament into discrete lengths a length required for [[a]] particular books book being bound;

transferring said plastic binding coil coils segments through ambient air to a plastic coil binding machine for binding said discrete segments into holes of the book being bound at a rate such that said plastic binding coil segments are cooled further by said ambient air to a temperature substantially that of room temperature so that an elapsed time between when coils segments are cut and said coil segments arrive at said binding machine is sufficient to allow said coils segments to cool slowly and adequately for proper processing by said binding machine; and

said binding machine inserting each said cooled plastic binding coil segment into a book to be bound in said binding machine.

32. (currently amended) The method of claim 31 wherein said plastic binding coil segments coils are advanced toward said binding machine in incremental steps upon a transfer mechanism.

33. (currently amended) The method of claim 31 wherein said plastic binding coil segments coils are transferred at least in part by a linkage cooling conveyor.

34. (currently amended) The method of claim 33 wherein said cooling conveyor intermittently advances said plastic binding coil segments binding coils toward said binding machine.

35. (currently amended) The method of claim 34 wherein a drive pulley communicating with and advancing said cooling conveyor is driven by a gear motor; and, a motor speed controller electrically connected to said gear motor causes said drive pulley to intermittently rotate thereby intermittently advancing said plastic binding coil segments towards said binding machine.

36. (currently amended) The method of claim 31 wherein said binding machine interacts with said plastic spiral forming machine at a compatible speed speeds to each other, wherein said coil forming machine carries out the steps of taking plastic thread from a spool, preheating said plastic thread in a heating chamber, advancing and then winding said plastic thread on a mandrel, discharging said heated plastic thread in said ambient free air as a said heated spiral coilshaped filament, by cutting said heated cut coil spiral shaped filament plastic thread formed into said plastic binding coil segments of to a predetermined size as a heated coil and transferring said heated coil being transferred to said transfer mechanism, and said transfer mechanism carries out the steps of moving said plastic binding coil segments intermittently, allowing said coil segments to cool on said transfer mechanism while on route to and transporting said cooled coil to a receiving conveyor of said binding machine.

37. (currently amended) The method of combination plastic spiral coil forming and binding machine as in claim 36 further comprising detecting an end of said plastic spiral shaped filament with a sensor, said sensor being adjustable to a required spiral length of said plastic binding coil segments as dictated by a book being bound by said binding machine; initiating cutting of said hot plastic spiral shaped filament by a cutter in response to a signal generated by said sensor; initiating an index cycle of said motor through a controller and a logic gate also in response to a signal generated by said sensor; and stopping said motor when a next vane is detected in a predetermined position by a detector.

38. (currently amended) The method of claim 37 wherein said transfer mechanism comprises a linkage cooling conveyor which includes a plurality of compartments for said plastic binding coil segments spiral-coils and said method further comprises the step of advancing movement of said linkage cooling conveyor incrementally to sequentially and discretely empty said compartments of said cooled plastic binding coil segments spiral-coils therefrom.